

Water System: Notice of Violation

Town Council Work session

August 17th, 2004

Outline

- Explanation of the Notice of Violation
- About HAA
- This is NOT an immediate concern to the consumer, you can drink your water.
- Water Authority is aware and has been taking proactive steps to reduce the byproduct
- What we will do to reduce the HAA.
- Public Notification requirements

Notice of Violation

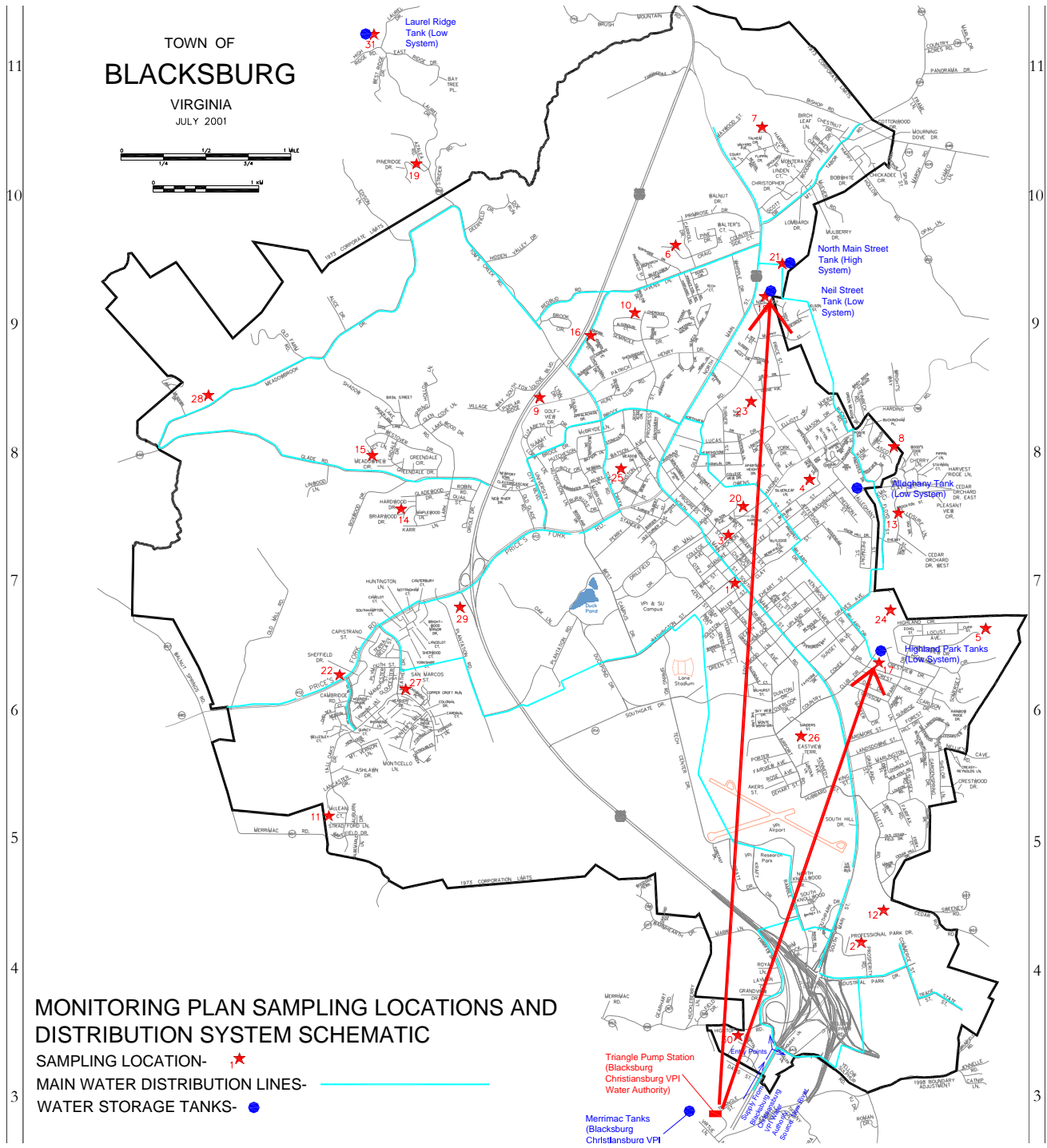
- Exceeding the 4 quarter running average of 60 parts per billion for Haloacetic acids (HAA).
- Our average: 64 parts per billion
- Violation: based on a risk of adverse health effects over long term exposure.
- Standard EPA language for Public Notification:
 - “Some people who drink water containing haloacetic acids in excess of the MCL (Maximum Contaminant Level) over many years may have an increased risk of getting cancer.”

What is HAA?

- Haloacetic acids
- How formed?
 - Chlorine is added to fight bacteria (disinfect the water)
 - Chlorine + Dissolved organic matter = Byproducts
 - HAA is a byproduct of Chlorine
 - More Chlorine added = more HAA
- HAA is a byproduct of the disinfection process.

Factors influencing the growth of HAA

- Natural Organics in the water pulled from the New River
- Amount of Chlorine added
- Contact time: time that Chlorine is in contact with the water (treatment + storage + travel time)
- Use or demand on the system (consumers)
- Remoteness of lines
- Temperature: air temp & water temp



Water Authority Proactive Steps to Reduce HAA

- EPA regulation: 1998: Nationwide Issue
- Study: “Evaluation of Alternatives for Disinfection Byproduct Control”- August 2000 Black & Veatch Corp.
- Relocation of Chlorine feed point at treatment plant: less contact time for the Chlorine, thus less HAA.
- Chlorine dioxide generation equipment installed: reduces HAA
- Installation of a sludge press: reduces HAA inhibiting material sooner from the process

Additional Reduction Measures to begin immediately

- REMEMBER: Chlorine needed to kill bacteria, Chlorine creates HAA
- **Reduce, then eliminate Chlorine** being added at the 460 pump station
- **Get the water to the customer faster** by lowering the contact time for the chlorine:
 - by FLUSHING the system in those areas of Town with long contact times (Meadowbrook, Wyatt Farm, Golf Course, Wash bay at Public Works, Coal Bank Ridge)
 - Bypassing one of the Water Authority's storage tanks.
- Begin **plant conversion to Chloramines**: eliminate the chlorine disinfection process altogether = reduced HAA byproducts.
- Increased demand with the return of students

Additional Reduction Measures to begin immediately

- Monitor effectiveness
 - Plant to begin weekly sampling for HAA's at our sample points.
- Re-evaluate if necessary.

Public Notification Requirements

- Mail or hand delivery within 30 days: water bills
- Another method as needed to reach others: newspaper
- Sample to Council

Other Violations

Jurisdiction	HAA level (ppb)	Why?	How fixed?	
Town of Blacksburg, VA	64	Organics in raw water, Cl		
Harbor Island, SC	62	Organics in raw water	Moved Cl addition at the plant, less reaction time	
City of Colonial Heights, VA	73	Organics in raw water	Adjusted Cl levels	
Fort Belvoir, VA	68	?		

Summary

- This is not an immediate risk to consumers
- Consumers do not need to boil water, it is safe to drink in the short term.
- It is a risk to consumers over the long term
- The Water Authority has plans in Spring 2005 to eliminate Chlorine disinfection, thus reducing the production of HAA.
- Now, the Water Authority will reduce the addition of Chlorine to the system and the Town will flush the lines to insure that freshly Chlorinated drinking water reaches all customers.
- Goal: pass the test for September

Town Council Questions?